# INJECTION WELL PLUGGING PLAN 40 CFR 146.92(b)

## **Pelican Sequestration Project**

1.0 Facility Information	1
2.0 Planned Tests or Measures to Determine Bottom-Hole Reservoir Pressure	2
3.0 Planned External Mechanical Integrity Test(s)	2
4.0 Information on Plugs	3
5.0 Narrative Description of Plugging Procedures for Injection Well	6
5.1 Notifications, Permits, and Inspections	6
5.2 Plugging Procedures	6
Appendix A: CCS 2 CO <sub>2</sub> Injector, Monitoring and USDW Well Plugging Plans	8

# **1.0 Facility Information**

Facility name: Pelican Sequestration Project

Pelican CCS 1 Well

Facility contact: Project Manager

5 Greenway Plaza Houston, TX 77046

Well location: Holden, Livingston Parish, Louisiana

(NAD 1927, BLM Zone 15N)

The Pelican Sequestration Hub, LLC will conduct injection well plugging and abandonment according to the procedures below.

Upon the end of life for the Pelican CCS 1, this injection well will be plugged and abandoned relevant to the requirements of Environmental Protection Agency (EPA) document 40 CFR Subpart H – Criteria and Standards Applicable to Class VI Wells. The plugging procedure and materials will be designed to prevent any unwanted fluid movement, resist the corrosive aspects of carbon dioxide (CO<sub>2</sub>) with water mixtures, and protect any underground sources of drinking water (USDWs).

## 2.0 Planned Tests or Measures to Determine Bottom-Hole Reservoir Pressure

- 1. Bottomhole pressure measurements will be taken using the installed downhole gauges. In case the gauges are not functioning properly, the operator will run pressure gauges during the P&A process of the well.
- 2. After injection has ceased, the well will be flushed with a kill fluid. A minimum of three tubing volumes will be injected without exceeding the fracture pressure. The injection packer and the tubing will be removed.
- 3. An active pulsed neutron log and/or casing inspection tool will be run and the well will be pressure tested to ensure integrity both inside and outside the casing prior to plugging.
- 4. If a loss of mechanical integrity is discovered, the well will be repaired before proceeding further with the plugging operations.
- 5. All casing in this well will have been cemented to the surface at the time of construction and will not be retrievable at abandonment.
- 6. A cement retainer will be used to squeeze and isolate the perforated section to prevent flowback of formation fluids that could contaminate the plug. The balanced-plug placement method will be used for the additional cement plugs planned.
- 7. Heavy gel mud ppg will be left between cement plugs.
- 8. All the casing strings will be cut off at least a ft below the surface and plow line.
- 9. A blanking plate with the required permit information will be welded on top of the cutoff casing.

Any necessary revisions to the well plugging plan to address any new information collected during logging, testing, and completion of the well will be made after these activities have been completed. The final plugging plan will be submitted to the Underground Injection Control (UIC) Program Director.

#### 3.0 Planned External Mechanical Integrity Test(s)

The Pelican Sequestration Hub, LLC will conduct at least one of the tests listed below to verify external mechanical integrity prior to plugging the injection well as required by 40 CFR 146.92(a).

- a) Pulse neutron log.
- b) Noise log
- c) DTS (Distributed Temperature Sensing) /DAS (Distributed Acoustic Sensing) survey.
- d) Temperature log

Injection Well Plugging Plan for Bluebonnet Sequestration Project Permit Number: R06-LA-0014

#### 4.0 Information on Plugs

The Pelican Sequestration Hub, LLC will use the materials and methods noted in Table PLG-1 to plug the injection well. The volume and depth of the plug or plugs will depend on the final geology and downhole conditions of the well as assessed during construction. The cement(s) formulated for plugging will be compatible with the carbon dioxide stream. The cement formulation and required certification documents will be submitted to the agency with the well plugging plan. The owner or operator will report the wet density and will retain duplicate samples of the cement used for each plug.

Table PLG-1—Information on Cement Plugs Pelican CCS 1

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
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- All plug depths will be adjusted after the well is drilled and completed.
- The plugging procedure will be updated as required by EPA and Louisiana regulators.
- Formation tops will be adjusted after running open hole electric logs.

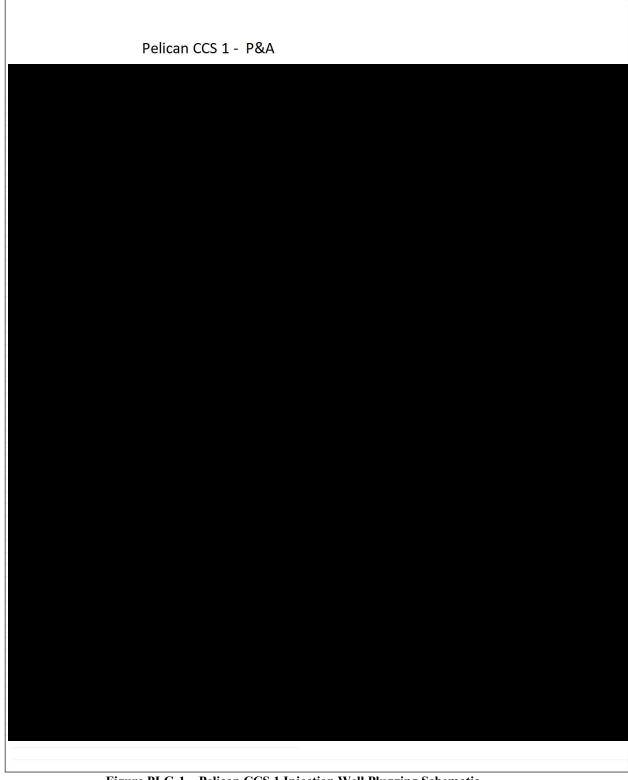


Figure PLG-1—Pelican CCS 1 Injection Well Plugging Schematic

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Figure PLG-2—Sample EPA Plugging and Abandonment Form

#### 5.0 Narrative Description of Plugging Procedures for Injection Well

## 5.1 Notifications, Permits, and Inspections

In compliance with 40 CFR 146.92(c), the Pelican Sequestration Hub, LLC will notify the regulatory agency at least 60 days before plugging the well and provide updated Injection Well Plugging Plan, if applicable.

# 5.2 Plugging Procedures

- 1. Move in rig onto the Pelican CCS 1 site and rig up (RU). All CO<sub>2</sub> pipelines will be marked and noted with the rig supervisor prior to move in.
- 2. Conduct and document a safety meeting.
- 3. Record the bottomhole pressure (BHP) from the downhole gauge, perform DST survey through fiber optic installed alongside the casing, and calculate kill fluid density.

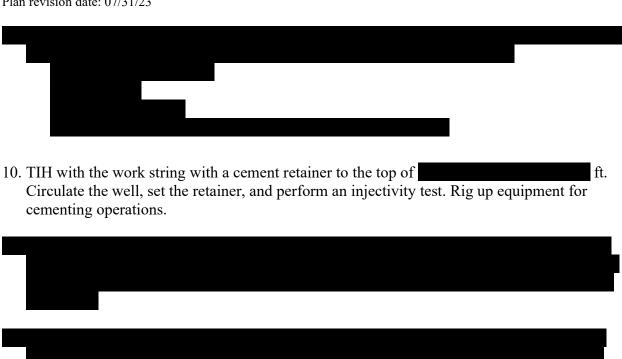


**Note:** If a failure in the long string casing is identified, the operator will prepare a plan to repair the well before plugging and abandonment.

- 6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).
- 7. Pull out of the hole and lay down tubing, packer, cable, and sensors.



8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.



15. Lay down the work string. Rig down all equipment and move out. Cut the casing at 5 ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

The proposed plugging details and schematics for Pelican CCS 2, are included in Appendix A.

# Appendix A: CCS 2 CO2 Injector, Monitoring and USDW Well Plugging Plans

Pelican CCS 2:

Table PLG-2—Information on Cement Plugs for Pelican CCS 2

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx

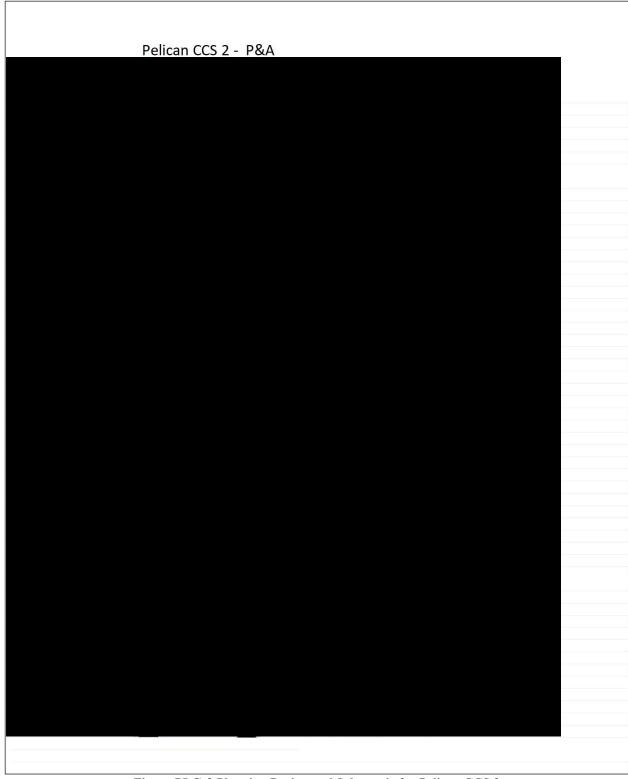
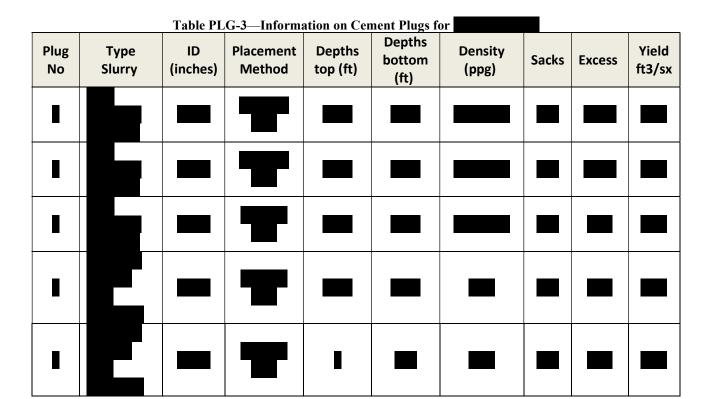


Figure PLG-3 Plugging Design and Schematic for Pelican CCS 2



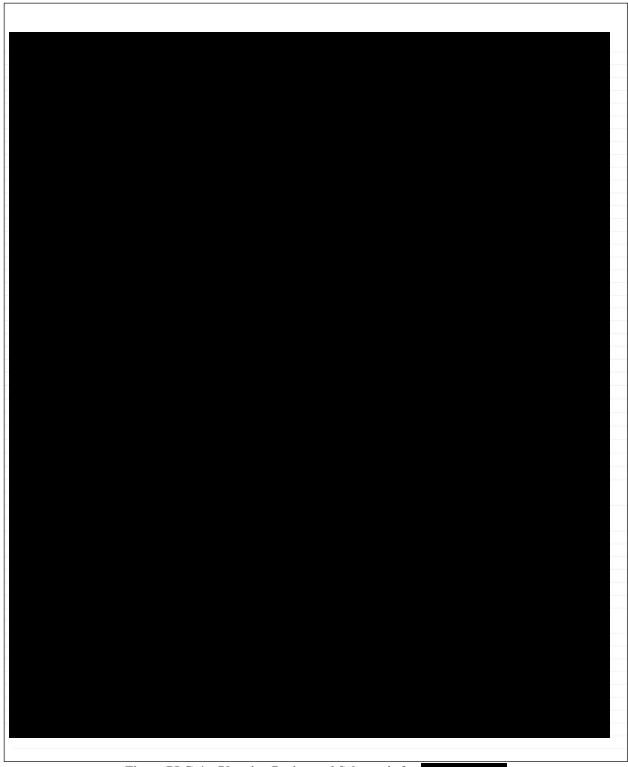
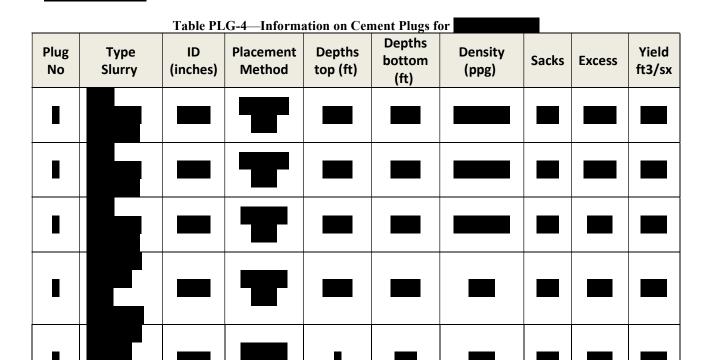


Figure PLG-4—Plugging Design and Schematic for



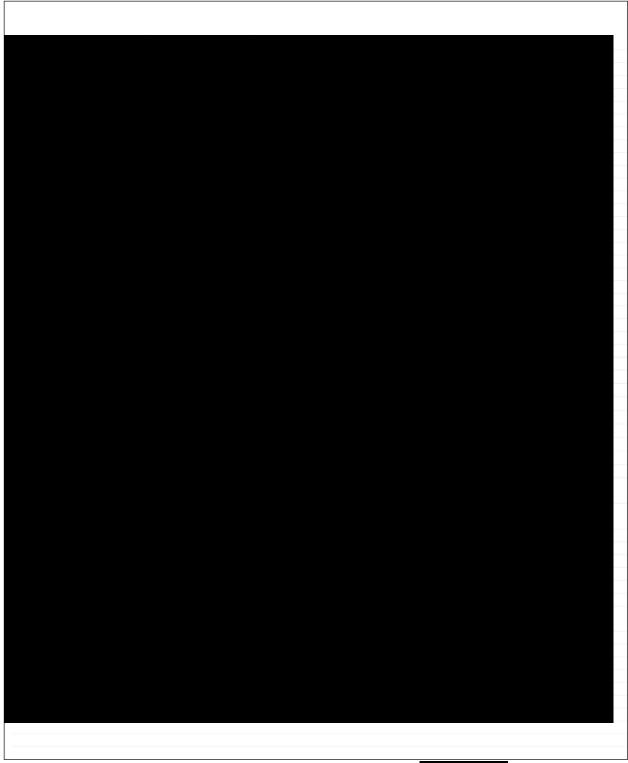
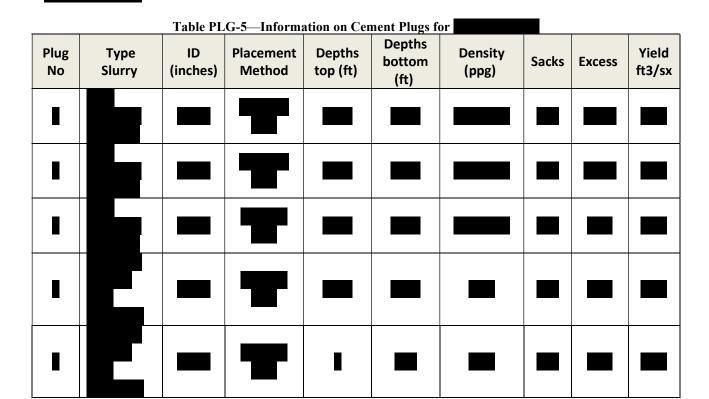


Figure PLG-5—Plugging Design and Schematic for



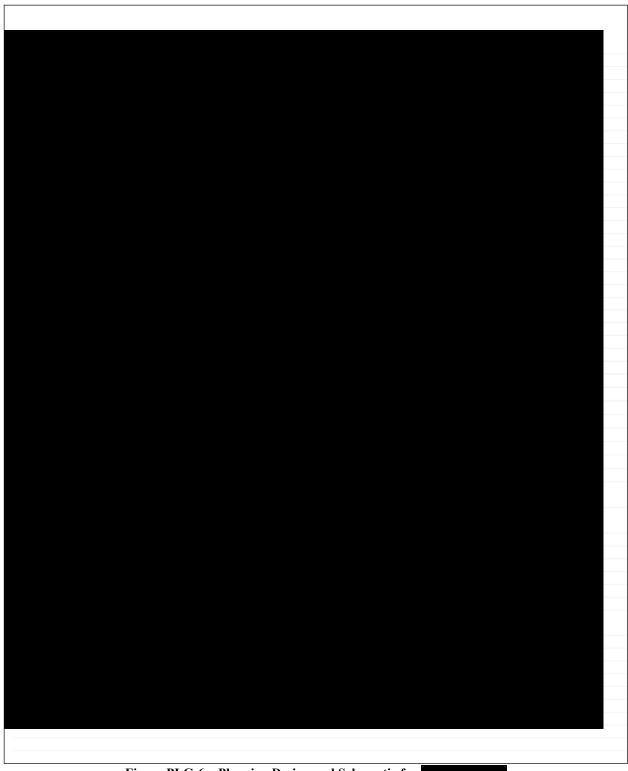
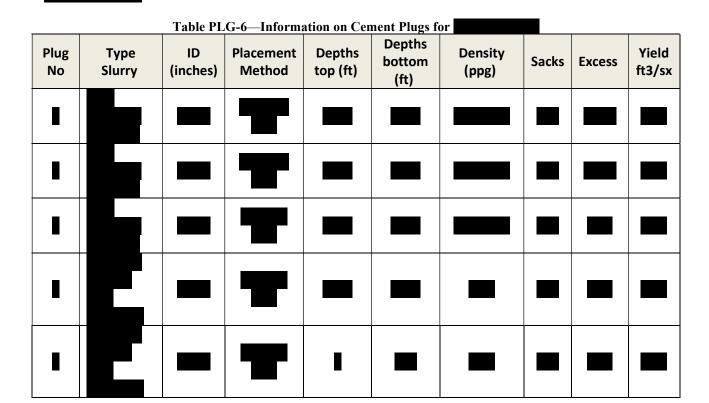
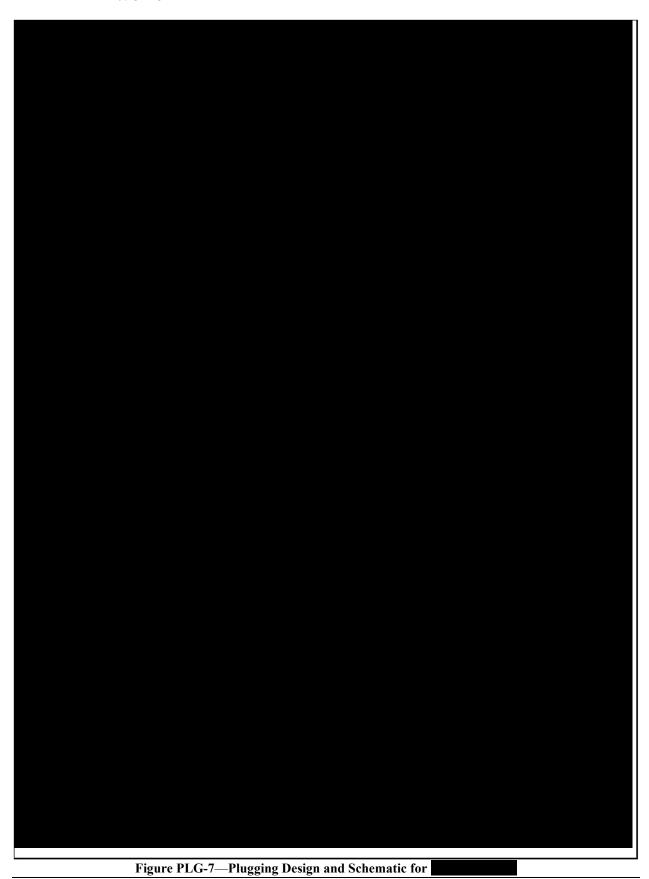


Figure PLG-6—Plugging Design and Schematic for





Injection Well Plugging Plan for Bluebonnet Sequestration Project Permit Number: R06-LA-0014



Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
				ı					

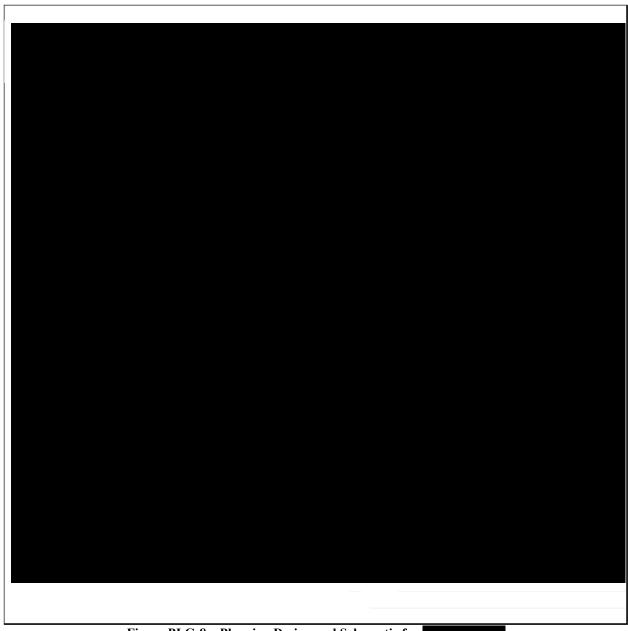
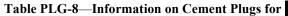


Figure PLG-8—Plugging Design and Schematic for



Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx

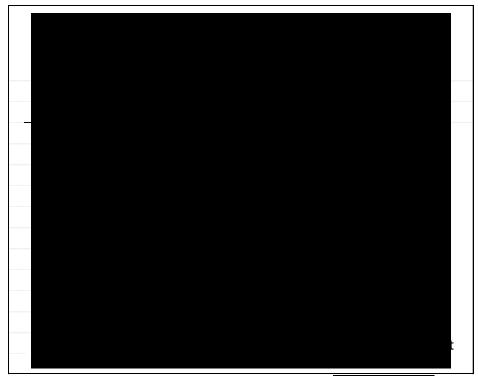


Figure PLG-9—Information on Cement Plugs for

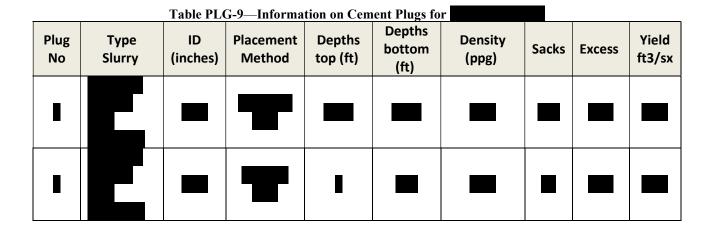




Figure PLG-10—Information on Cement Plugs for